VERB STEM ABLAUT IN NAVAJO A REGULAR IRREGULARITY

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0. Introduction

The Navajo verb is well-known for its remarkable morphological complexity (Young and Morgan 1992) Recent theoretical work on the Navajo verb has focused on finding regularities in the system of verb stem conjugation (Lachler 1997, forthcoming) Within this system, one area which has been largely overlooked is that of verb stem ablaut In this paper, we will examine the different ablaut patterns which verb stems display, and see how, even though ablaut is an irregular feature, it follows regular patterns All data for this paper comes from Young and Morgan 1992

1. The Navajo Verb

The verb in Navajo can be analyzed as comprising a prefix string and a verb theme The prefix string obligatorily includes markers of subject and object, as well as mode, but may also include any of a large number of derivational affixes, as well as incorporated postpositions The verb theme is composed of two elements, a "classifier" prefix, which typically encodes voice and transitivity, and a verb stem The verb stem carries the basic (if quite abstract) lexical meaning of the verb A highly simplified version of the Navajo verb template is shown in Table I

<table>
<tr><td colspan="3">Verb</td></tr>
<tr><td rowspan="2">Prefix String</td><td colspan="2">Theme</td></tr>
<tr><td>Classifier</td><td>Stem</td></tr>
</table>

Table I Structure of the Navajo Verb

2. Basic Conjugation of Verb Stems in Navajo

There are two significant facts about verb stems in Navajo First, they nearly all have the shape CVC, where V stands for any vowel, whether long or short, high tone or low tone Second, they are obligatorily inflected for both Mode and Aspect There are a dozen or so different aspects, and seven different modes in Navajo, although not all aspect-mode combinations are possible Moreover, not all verbs are found in all aspects

The Mode and Aspect inflections are expressed in three ways

(1) alternations in the length of the stem vowel
(2) alternations in the tone of the stem vowel
(3) alternations in the final consonant

Table II shows the 5 Mode forms (shown across the top) for 5 different Momentaneous aspect verb stems They demonstrate some of the different patterns of vowel length, tone and final consonants

	PERFECTIVE	IMPERFECTIVE	OPTATIVE	ITERATIVE	FUTURE
seize	tsood	tsóód	tso'	tsóód	tsoå
relax	tåóo'	taóóh	tåóóh	tåoóh	tåóoå
grab	ɟi'	ɟiih	ɟih	ɟiih	ɟih
get old	tɪh	tíɪh	tɪh	tíɪh	tɪh
poke	zhiizh	zhíísh	zhɪsh	zhiísh	zhɪsh

Table II Sample Verb Stems

In total, for Momentaneous aspect verbs (the largest and most diverse set of verb stems), there are 17 different length patterns, 17 different tone patterns, and 49 different final consonant patterns

3. Ablaut Patterns

Of the 409 Momentaneous verbs in Navajo, 287 keep the same stem vowel quality throughout all their forms The other 122 verbs show some variation in stem vowel quality, which we will subsume under the term "ablaut" In every case, there are only two different vowel qualities in the paradigm

There are a total of 7 different ablaut patterns found among these 122 verbs, which are shown in Table III below The symbol 'x' indicates the vowel quality that occurs in the Perfective, the symbol 'y' indicates the other vowel quality The number in the left-hand column indicates the number of verbs which follow this ablaut pattern

	PERFECTIVE	IMPERFECTIVE	OPTATIVE	ITERATIVE	FUTURE
49	x	x	x	y	y
38	x	y	y	y	y
24	x	y	y	x	x
8	x	y	x	y	y
1	x	y	x	y	x
1	x	x	y	x	x
1	x	x	x	y	x

Table III Ablaut Patterns

4. Relationship Between Ablaut and Length

When we look at the distribution of the verbs following particular ablaut patterns, and compare that with the vowel length patterns they follow, we see some significant generalizations. Below, we will look at individual length patterns, and see how they correlate with the ablaut patterns seen above

4.1. Length Pattern sllss

This is one of the most common length patterns for Momentaneous aspect verbs, being followed by 109 of the 409 verbs Of these 109, 27 are ablauting verbs Of these 27, the large majority follow the xyyxx ablaut pattern The data is summarized in Table IV

Perfective	Imperfective	Optative	Iterative	Future	#
short	long	long	short	short	109
x	y	y	x	x	22
x	y	y	y	y	3
x	x	x	y	y	4

Table IV Ablaut Patterns for Verb Stems of Length Pattern sllss

Examples of each of these patterns are shown in Table V

	Perfective	Imperfective	Optative	Iterative	Future
hop	cha'	cheéh	chééh	chah	chah
tell	ne'	níih	níih	nih	nih
ignite	tåah	tåáád	tåáád	tåi'	tåiå

Table V Sample Verb Stems

4.2. Length Pattern lllss

This is the most common of all length patterns for Momentaneous aspect verbs, occurring with 135 of the 409 verbs Of the 39 ablauting verbs in this group, 37 of them follow the xxxyy ablaut pattern The data is summarized in Table VI

Perfective	Imperfective	Optative	Iterative	Future	#
long	long	long	short	short	135
x	x	x	y	y	37
x	y	y	x	x	1
x	y	y	y	y	1

Table VI Ablaut Patterns for Verb Stems of Length Pattern lllss

Examples of each of these patterns are shown in Table VII

	Perfective	Imperfective	Optative	Iterative	Future
open mouth	ch'ee'	ch'ééh	ch'ééh	ch'ah	ch'ah
crack	k'íiz	k'éés	k'éés	k'is	k'is
white	gaii	gááh	gááh	gah	gah

Table VII Sample Verb Stems

4.3. Length Pattern llllll

This is another common length pattern for Momentaneous verbs, with a total of 67 verbs, 13 of which are ablauting The data is summarized in Table VIII

Perfective	Imperfective	Optative	Iterative	Future	#
long	long	long	long	long	67
x	y	y	y	y	6
x	y	x	y	y	6
x	y	x	y	x	1

Table VIII Ablaut Patterns for Verb Stems of Length Pattern lllll

Examples of each of these patterns are shown in Table IX

	Perfective	Imperfective	Optative	Iterative	Future
defecate	chaa'	chĩh	chĩh	chıh	chıå
bathe	bîî'	beeh	bîî'	beeh	beeå
pluck	bîî'	bééh	bîî'	bééh	bîîå

Table IX Sample Verb Stems

4.4 Length Pattern sssss

This is a much less common length pattern, with only 14 verbs following it Of these 14, only 1 is ablauting The data is summarized in Table X

Perfective	Imperfective	Optative	Iterative	Future	#
short	short	short	short	short	14
x	y	y	y	y	1

Table X Ablaut Patterns for Verb Stems of Length Pattern sssss

The stem forms for this one verb are shown in Table XI

	Perfective	Imperfective	Optative	Iterative	Future
snow	zas	zıs	zıs	zıs	zıs

Table XI Sample Verb Stems

4.5. Length Pattern sssll

This is another infrequent length pattern, with only 15 members However, fully 8 of these 15 are ablauting verbs, and they all follow the same xxxyy ablauting pattern The data is summarized in Table XII

Perfective	Imperfective	Optative	Iterative	Future	#
short	short	short	long	long	15
x	x	x	y	y	8

Table XII. Ablaut Patterns for Verb Stems of Length Pattern sssll

An example of this pattern is shown in Table XIII

	Perfective	Imperfective	Optative	Iterative	Future
get used to	dın	dın	dın	dîîh	dîîå

Table XIII Sample Verb Stems

4.6. Length Pattern sllll

This is a somewhat more common length pattern, with 42 members It also has a high rate of ablauting verbs, with nearly all of them following the ablaut pattern xyyyy The data is summarized in Table XIV

Perfective	Imperfective	Optative	Iterative	Future	#
short	long	long	long	long	42
x	y	y	y	y	22
x	y	x	y	y	2

Table XIV Ablaut Patterns for Verb Stems of Length Pattern sllll

Examples of both of these patterns are shown in Table XV

	Perfective	Imperfective	Optative	Iterative	Future
make	chî	chííh	chííå	chííh	chííå
win	bâ	bîih	bââ'	bîih	biiå

Table XV· Sample Verb Stems

4.7. Length Pattern sslll

This is a rare length pattern, followed by only 4 verbs However, 3 of the 4 are ablauting verbs, and all follow the xyyyy ablaut pattern The data is summarized in Table XVI

Perfective	Imperfective	Optative	Iterative	Future	#
short	short	long	long	long	4
x	y	y	y	y	3

Table XVI Ablaut Patterns for Verb Stems of Length Pattern sslll

An example of this pattern is shown in Table XVII

	Perfective	Imperfective	Optative	Iterative	Future
very cold	dlí	dló	dlóóå	dlóoh	dlóóå

Table XVII Sample Verb Stems

4.8. Length Pattern lssll

This is another rare length pattern, with only two verbs, one of which is an ablauting verb, following ablaut pattern xyyxx The data is summarized in Table XVIII

Perfective	Imperfective	Optative	Iterative	Future	#
long	short	short	long	long	2
x	y	y	x	x	1

Table XVIII· Ablaut Patterns for Verb Stems of Length Pattern lssll

The stem forms for this one verb are shown in Table XIX

	Perfective	Imperfective	Optative	Iterative	Future
full	bĩĩd	bɪn	bɪn	bĩĩh	bĩĩå

Table XIX. Sample Verb Stems

4.9. Length Pattern llsll

This is another infrequent length pattern, followed by 4 verbs, 3 of which are ablauting verbs The data is summarized in Table XX

Perfective	Imperfective	Optative	Iterative	Future	#
long	long	short	long	long	4
x	y	y	y	y	2
x	x	y	x	x	1

Table XX Ablaut Patterns for Verb Stems of Length Pattern llsll

Examples of both of these patterns are shown in Table XXI

	Perfective	Imperfective	Optative	Iterative	Future
be	lĩĩd	leeh	le'	leeh	leeå
say	nɪɪd	nɪɪh	ne'	nɪɪh	nɪɪå

Table XXI Sample Verb Stems

4.10. Length Pattern lllsl

This length pattern is followed by 5 verbs, one of which is ablauting The data is summarized in Table XXII

Perfective	Imperfective	Optative	Iterative	Future	#
long	long	long	short	long	5
x	x	x	y	x	1

Table XXII Ablaut Patterns for Verb Stems of Length Pattern lllsl

The stem forms for this one verb are shown in Table XXIII.

	Perfective	Imperfective	Optative	Iterative	Future
fart silently	zéé'	zeeh	zééh	zah	zééå

Table XXIII Sample Verb Stems

4.11. Summary

Table XXIV provides a summary of the relationship between length patterns and ablaut patterns

	xyyxx	xyyyy	xxxyy	xyxyy	xyxyx	xxyxx	xxxyx
sllss	**22**	3	4				
llss	1	1	**37**				
lllll		**6**		6	1		
sssss		1					
sssll			**8**				
slll		**22**		2			
sslll		**3**					
lssll	1						
llsll		**2**				1	
llsl							1

Table XXIV Relationship Between Length and Ablaut Patterns

From all the data we have seen, it is apparent that there is a close relationship between length and ablaut Specifically, we can say that if a verb is an ablauting verb, then it will have one stem vowel quality when the stem vowel is short, and a different stem vowel quality when the stem vowel is long

In Table XXV, we have calculated for each length pattern how many ablauting verbs follow the "regular" pattern, as described above, and how many are "irregular"

	REGULAR	IRREGULAR
sllss	22	7
llss	37	2
llll	0	13
sssss	0	1
sssll	8	0
slll	22	2
ssll	0	3
lssll	1	0
llsll	1	2
llsl	1	0
TOTALS	92 (75%)	30 (25%)

Table XXV Regular and Irregular Ablauting Verbs

As the table shows, of the 122 ablauting Momentaneous aspect verbs, 92 of them (or 75%) follow a regular pattern of ablaut, while 30 of them (or 25%) are irregular Note that the verbs of Length Pattern llll and Length Pattern sssss are all irregular with respect to ablaut, since they have no vowel length alternations in the stem forms for the ablaut patterns to follow

5. Vowel Quality

Having looked at the distribution of ablaut across the paradigm, and seen that it is by and large regular, we turn briefly to the question of vowel quality Here, there are (at least) two implicational generalizations which can be made

Firstly, if the short stem vowel is oral and not *e*, then the long vowel is *e* Of the 67 verbs where the this is applicable, it holds true for 62 of them

Secondly, if the short vowel is followed by *n*, then the long vowel will be the nasal version of the short vowel, with no following *n* This holds true in 8 out of 8 cases

These patterns cover 70 of the 122 ablauting verbs, meaning that the remaining 52 verbs

probably require both vowel qualities to be listed in the lexicon

6. Conclusion

Despite the fact that ablaut is an irregular feature of verbs in Navajo, the actual patterns of ablaut that are found with given verbs are by and large regular, if one knows the Length Pattern that the verb follows These findings have implications for synchronic accounts of the Navajo verb system, as well as diachronic accounts of the development and spread of ablaut within the Athabaskan verbal paradigm

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